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Try A Filter For Free!

FAQs

FLEX System

Paint Pockets™

Paint Arrestance Filter Test

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Aerospace M-319

Testimonials

Inquiry Form

Email Us

Tested for: **Paint Pockets® Co.**
 Filter Mfr.: **Paint Pockets® Co.**
 Filter Name: **PP Series (PP****)**
 Report#/Test# **R 042 T 079**
 Report Date: **Jan. 8, 1997**

Test Information

FILTER DESCRIPTION:

Two layers, stiff poly w/large voids on soft poly pad

PAINT DESCRIPTION:

High Solids Baking Enamel (S.W. Permaclad 2400, red)

PAINT SPRAY METHOD:

Conventional Air Gun at 40 PSI

SPRAY FEED RATE:

140 gr./min. 130 cc./min.

AIR VELOCITY:

150 FPM

Test Results

INITIAL PRESSURE

DROP of Clean Test Filter

0.08 in. water

FINAL PRESSURE DROP

of Loaded Test Filter

0.30 in. water

WEIGHT GAIN on TEST

FILTER & Test Frame Trough

4340 grams

PAINT HOLDING

CAPACITY of TEST

FILTER

3125 grams = 6.9 lbs.

PAINT RUN-OFF

1215 grams

WEIGHT GAIN - FINAL

FILTER

6.9 grams =

PENETRATION

AVERAGE REMOVAL

EFFICIENCY of TEST

FILTER

99.84%

Test Engineer: P. Tuzinski

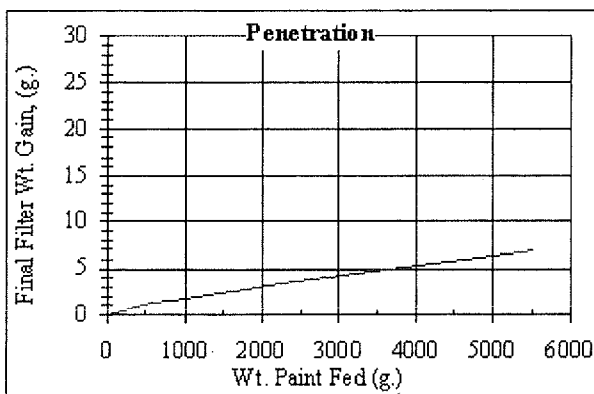
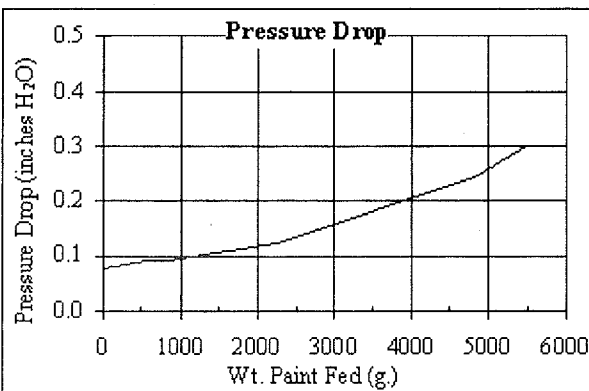
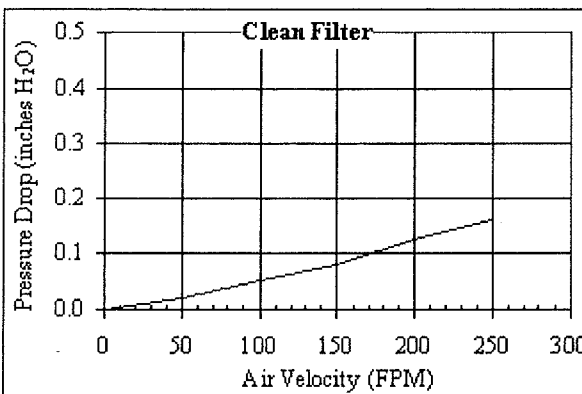
Supervising Engineer: K.

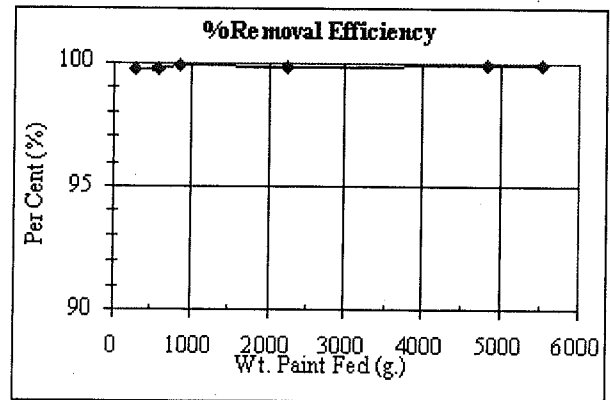
C. Kwok, Ph.D.



PAINT ARRESTANCE FILTER TEST REPORT

Spray Removal Efficiency & Paint Holding Capacity





Only Paint Pockets® delivers the time and money-saving performance of the patented Diamond Pocket Technology™

© 2004 Paint Pockets Company • 915 North 43rd Avenue, Omaha, NE 68131
Phone: Toll Free 877-768-7587 • Fax: Toll Free 877-768-7588 • Email:
info@paintpockets.com



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FRACTIONAL EFFICIENCY 150 FPM TEST

Date: Aug. 31, 1998 pfrac043 Test Requested by: R. Adams
 Filter ID: Paint Pockets (P P **** series) Paint Pockets Co.
 Test Type: Fractional Efficiency 150 FPM Filter Mfr.: Paint Pockets Co.
 Paint: SW Permaclad High Solids SBBE ΔP init.: 0.0732 in. ΔP final: 0.0787 in.

Time Elapsed, min.: 1 min. 2 min. 3 min. 4 min. 5 min. 6 min. 7 min. 8 min. 9 min. 10 min. Average

Size Range (μm)	Initial	Fractional Efficiency (%)								
0.2-0.3										0.0
0.3-0.4										0.0
0.4-0.6										0.0
0.6-0.8										0.0
0.8-1.0										0.0
1.0-1.5										0.0
1.5-2.0										0.0
2.0-2.5										0.0
2.5-3.0										6.9
3-4	11.8	9.1	6.1	7.5	6.1	5.4	5.1	4.0		34.9
4-5	38.3	36.5	33.9	35.3	34.2	34.2	33.8	33.0		66.0
5-6	67.2	66.1	65.4	66.1	65.6	66.4	65.8	65.5		82.3
6-8	83.5	82.0	81.6	82.4	81.9	82.5	83.5	81.5		91.7
8-10	93.6	90.3	90.2	93.5	90.7	91.2	93.3	90.7		97.5
10-12	98.3	96.6	97.1	98.4	96.5	98.1	98.4	96.8		99.9
12-15	99.7	100.0	100.0	99.7	100.0	100.0	100.0	100.0		100.0
15-20										100.0
20-30										100.0
30-40										100.0
40-50										100.0
50-70										100.0
70-100										100.0

Paint Break-Up Region - No Filtration

100% Filtration Region

$$F_{eff} = \frac{C_{up} - C_{down}}{C_{up}} \times 100\%$$

F_{eff} = Fractional Efficiency of Paint Overspray

C_{up} = Particle Concentration Upstream of Filter

C_{down} = Particle Concentration Downstream of Filter

Technical Information

Halar[®] ECTFE 6914

ECTFE Primer for powder coating

Description

Halar[®] 6914 is a gray, semi-crystalline melt processable fluorinated primer. It is designed to be applied directly to substrates by electrostatic or fluidized bed techniques. In particular Halar[®] 6914 is recommended for use as a primer on aluminum large surface area parts in protection and anti-corrosion applications.

Halar[®] 6914 provides optimum and rapid bonding and can be used to maximize topcoat adhesion performance in high build coatings specifically. It also exhibits very good thermal and color stability, outstanding permeation and flame resistance and very good chemical resistance.

Refer to Table 1 below for Halar[®] 6914 properties.

Product Features

Main features of Halar[®] 6914 include:

- Gray color
- Very good thermal and color stability
- Optimum and rapid adhesion
- Particularly designed for large surface area parts in aluminum
- Outstanding permeation resistance
- Optimum flame resistance
- Very good chemical resistance

Table 1: Typical Properties (Data not for specification purposes)

Property	Units	Nominal Value	Standard Test Method
Density	g/cm ³	1.65 - 1.71	ASTM D792
Melting point	°C	220 - 227	DSC procedure
Melt flow index (275°C, 2.16kg)	g/10'	5 - 9	CTFE-XP2
Average particle size	µm	65 to 105	ASTM D1921-63

Solvay
Solexis



Re:From: "Sarah Stine" <slstine@torf.us>
Subject: Re:
Date: Wed, April 23, 2008 9:11 am
To: "Tom Slutsker" <tslutsker@por15.com>
Cc: mtorf@torf.us

Tom-

Thank you very much for your quick response and the information. My client is considering their use of this material, so I won't ask any more questions at this time. However, if you have any info in hand about extent of reaction or emission studies, please send it to me.

Best Regards,
Sarah

On Tue, April 22, 2008 9:15 am, Tom Slutsker wrote:

> Dear Sarah,

>

>

> The main resin in POR 15 is a mixture of Monomeric and Polymeric MDIs.

> The monomeric MDI is a "bad guy" and according to the manufacturer of

> the resin there is between 5 to 20% of Monomeric MDI(cas 101-65-8) in

> the product. It is my opinion that in states where MDI is tightly

> regulated spraying a product containing monomeric MDI could be a problem

> as far as environmental regulations are concerned. This is strictly an

> opinion; if you have additional questions I might have to dig deeper.

>

>

> Best regards,

>

> Tom Slutsker/POR-15,Inc.

>

>

>>POR-15 Paint Use: MDI EmissionsFrom: "Sarah Stine" <slstine@torf.us>

>> Subject: POR-15 Paint Use: MDI Emissions

>> Date: Sat, April 19, 2008 11:49 am

>> To: support@por15.com

>>

>>

>>Greetings-

>>I am preparing an air quality permit for a client who uses POR-15 paint.

>>MDI (CAS 101-68-8) is tightly controlled as a toxic air pollutant in our

>>state (Idaho). To facilitate permitting, I need clarification on the form

>>of the MDI in the POR-15 and what happens to the MDI when the coating is

>>sprayed.

>>

>>Forgive my limited understanding of the chemistry, but my impression is

>>that the MDI in POR-15 is pre-polymerized and polymerizes further during

>>the drying process. If true, will this reaction also occur with any MDI

>>that is captured in the spray booth filter? How much unpolymerized MDI is

>>present in the POR-15?

>>

>>I appreciate any information you can provide to clarify my understanding

>>and assist me with permitting this paint.

>>

>>Best Regards,

>>Sarah

>>

>>Sarah Stine, P.E.

>>slstine@torf.us

>>208.571.2393 FAX: 208.345.8285

>>

>>TORF Environmental Management

>>www.torf.us

954- 203

DUPONT MATERIAL SAFETY DATA SHEET

Page: 1
04/24/2006

***** SECTION 1 - Product and Company Identification *****

Manufacturer: E.I. DuPont de Nemours & Co.
Fluoroproducts
Wilmington, DE, 19898

Telephone: Product Information: (800) 441-7515
Medical Emergency: (800) 441-3637
Transportation Emergency: (800) 424-9300 (CHEMTREC)

PRODUCT NAME: ONE COAT BLACK

PRODUCT CODE: 954- 203 031208

Chemical Family: No Information Available

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rights reserved. Copies may be made only for those using
DuPont products.

***** SECTION 2 - Composition, Information on Ingredients *****

CAS #	Ingredient	Concentration/ Range (%)	Exposure Limits**
112-34-5	ETHANOL, 2-(2-BUTOXYETHOXY)-	3	D 5.0 ppm A None O None
64742-95-6	AROMATIC HYDROCARBON		D 50.0 ppm A None O None
1330-20-7	XYLENE	6	A 150.0 ppm 15 min STEL A 100.0 ppm O 100.0 ppm D 150.0 ppm 15 min STEL D 100.0 ppm 8 & 12 hour TWA
111-76-2	ETHYLENE GLYCOL MONOBUTYL ETHER	4	A 20.0 ppm O 50.0 ppm Skin D 5.0 ppm Skin
95-63-6	1,2,4-TRIMETHYL BENZENE	2	A 25.0 ppm O 25.0 ppm
50-00-0	FORMALDEHYDE	0.2	A 0.3 ppm CEIL
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***** SECTION 2 - Composition, Information on Ingredients *****
Cont'd

			O	2.0 ppm 15 min STEL
			O	0.7 ppm
			D	1.0 ppm 15 min TWA
			D	0.5 ppm 8 & 12 hour TWA
68002-26-6	BENZOGUANIMINE RESIN		A	None
			O	None
25067-11-2	FLUORINATED ETHYLENE PRO- PYLENE RESIN		O	15.0 mg/m3 Total Dust PNOR
			O	5.0 mg/m3 Respirable Dust PNOR
			D	10.0 mg/m3 8 & 12 hour TWA Total Dust
			D	5.0 mg/m3 8 & 12 hour TWA Respirable Dust
			A	None
108-10-1	METHYL ISOBUTYL KETONE	23	A	75.0 ppm 15 min STEL
			A	50.0 ppm
			O	100.0 ppm
25068-38-6	BISPHENOL-EPICHLOROHYDRI- N TYPE POLYMER		A	None
			O	None
71-36-3	N-BUTYL ALCOHOL	3	A	20.0 ppm
			O	100.0 ppm
			D	50.0 ppm 15 min TWA
			D	25.0 ppm
123-42-2	DIACETONE ALCOHOL		A	50.0 ppm TLV
			O	50.0 ppm TWA
1333-86-4	CARBON BLACK	1.2	A	3.5 mg/m3
			O	3.5 mg/m3
			D	0.5 mg/m3 8 & 12 hour TWA

Respiratory:

Do not breathe vapors or mists. Wear an appropriate, properly fitted NIOSH approved respirator during application and until all vapors and spray mists are exhausted unless air monitoring demonstrates vapor/mist levels are below applicable limits. If respirators are required, use a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH approved TC-23C) and particulate filter (NIOSH TC-84A). In confined spaces, or in situations where continuous spray operations are typical, or if proper air-purifying respirator fit is not possible, wear a positive pressure, supplied-air respirator (NIOSH TC-19C). In all cases, follow respirator manufacturer's directions for respirator use.

Protective clothing:

Neoprene gloves and coveralls are recommended.

Eye protection:

Desirable in all industrial situations. Goggles are preferred to prevent eye irritation. If safety glasses are substituted, include splash guard or side shields.

***** SECTION 9 - Physical and Chemical Properties *****

Evaporation Rate	Slower than Ether
Vapor Pressure of principal solvent	0.96 mm @ 200 Deg C
Solubility of solvent in water	NIL
Vapor density of principal solvent (Air = 1)	4.00
Approx. Boiling range	116 - 190 DEG (C)
Approx. Freezing range	No Data Available
Gallon weight (lbs/gal)	8.24
Specific gravity	0.99
Percent volatile by volume	76.02
Percent volatile by weight	66.46
Percent solids by volume	23.98
Percent solids by weight	33.54
Odor	Characteristic Paint Odor
Appearance	Semi-viscous liquid
Physical state	Liquid
pH (waterborne systems only)	Not Applicable
VOC* less exempt (lbs/gal)	5.5
VOC* as packaged (lbs/gal)	5.5

* VOC less exempt (theoretical) and VOC as packaged (theoretical) are based upon the VOC of the packaged material at the point of

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DUPONT MATERIAL SAFETY DATA SHEET

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***** SECTION 9 - Physical and Chemical Properties *****

Cont'd

manufacture.

***** SECTION 10 - Stability and Reactivity *****

Stability:

Stable

Incompatibility (materials to avoid):

None reasonably foreseeable

010-000140

DUPONT MATERIAL SAFETY DATA SHEET

Page: 1
10/03/2006

***** SECTION 1 - Product and Company Identification *****

Manufacturer: E.I. DuPont de Nemours & Co.
Fluoroproducts
Wilmington, DE, 19898

Telephone: Product Information: (800) 441-7515
Medical Emergency: (800) 441-3637
Transportation Emergency: (800) 424-9300 (CHEMTREC)

PRODUCT NAME: ONE COAT GRAY

PRODUCT CODE: 420- 104

060721

Chemical Family: No Information Available

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***** SECTION 2 - Composition, Information on Ingredients *****

CAS #	Ingredient	Concentration/ Range (%)	Exposure Limits**
13463-67-7	TITANIUM DIOXIDE	6.5	A 10.0 mg/m3 O 15.0 mg/m3 Total Dust D 10.0 mg/m3 Total Dust D 5.0 mg/m3 Respirable Dust
872-50-4	METHYL PYRROLIDONE	52	D 0.0 mg/m3 D 10.0 ppm 8 & 12 hour TWA D 5.0 ppm 8 & 12 hour TWA Skin A None O None
123-42-2	DIACETONE ALCOHOL		A 50.0 ppm TLV O 50.0 ppm TWA
9002-84-0	POLYTETRAFLUOROETHYLENE		O 15.0 mg/m3 Total Dust PNOR O 5.0 mg/m3 Respirable Dust

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DUPONT MATERIAL SAFETY DATA SHEET

Page: 2
10/03/2006***** SECTION 2 - Composition, Information on Ingredients *****
Cont'd

		PNOR
	D	10.0 mg/m3
		Total Dust
	D	5.0 mg/m3
		Respirable Dust
	A	None
25608-63-3	POLYETHERSULFONE	
	S	10.0 mg/m3
	A	None
	O	None
108-10-1	METHYL ISOBUTYL KETONE	20
	A	75.0 ppm
		15 min STEL
	A	50.0 ppm
	O	100.0 ppm

OSHA HAZARDOUS? Yes

** A = ACGIH, O = OSHA, D = Dupont, S = Supplier (For additional definition of terms, see Section 16). Limits are 8-hour TWA unless otherwise specified.

***** SECTION 3 - Hazards Information *****

Emergency Overview:

WARNING! FLAMMABLE LIQUID AND VAPOR. VAPORS AND SPRAY MIST HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS SUCH AS DIZZINESS, HEADACHE, OR NAUSEA. MAY CAUSE NOSE, THROAT, EYE AND SKIN IRRITATION. CAN BE ABSORBED THROUGH THE SKIN.

Potential Health Effects:

Inhalation:

May cause nose and throat irritation. May cause nervous system depression characterized by the following progressive steps: headache, dizziness, nausea, staggering gait, confusion, unconsciousness. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ingestion:

May result in gastrointestinal distress.

Skin or eye contact:

May cause irritation or burning of the eyes. Repeated or prolonged liquid contact may cause skin irritation with discomfort and dermatitis.

Other Potential Health Effects in addition to those listed above:

TITANIUM DIOXIDE

Is an IARC, NTP or OSHA carcinogen.

In a lifetime inhalation test, lung cancers were found in some rats

NEdge PIC Modification

FP Area MSDS
One Coat Gray
Page 1 of 2

***** SECTION 5 - Firefighting Measures *****

Flash Point (Method) 73 deg F to below 100 deg F Closed Cup
 Approx. flammable limits No Information Available
 Auto ignition temperature No Information Available
 Hazardous Combustion Products:
 CO, CO₂, smoke, and oxides of any heavy metals that are reported in
 "Composition, Information on Ingredients" section.
 Extinguishing media:
 Universal aqueous film-forming foam, carbon dioxide, dry chemical.
 Special fire fighting procedures:
 Full protective equipment, including self-contained breathing
 apparatus, is recommended. Water from fog nozzles may be used to
 prevent pressure build-up.
 Fire & explosion hazards:
 Flammable liquid. Vapor/air mixture will burn when an ignition
 source is present.

***** SECTION 6 - Accidental Release Measures *****

Procedures for cleaning up spills or leaks:
 Ventilate area. Remove sources of ignition. Prevent skin and eye
 contact and breathing of vapor.

Wear a properly fitted air-purifying respirator with organic vapor
 cartridges (NIOSH approved TC-23C), eye protection, gloves and
 protective clothing. Confine, remove with inert absorbent, and
 dispose of properly.

***** SECTION 7 - Handling and Storage *****

Precautions to be taken in handling and storing:
 Observe label precautions. Keep away from heat, sparks, flame, static
 discharge and other sources of ignition. VAPORS MAY CAUSE FLASH FIRE.
 Close container after each use. Ground containers when pouring.
 Do not transfer contents to bottles or unlabeled containers. Wash
 thoroughly after handling and before eating or smoking. Do not store
 above 120 deg F.
 OSHA/NFPA Storage Classification: IC
 Other precautions:
 If material is a coating: do not sand, flame cut, braze or weld dry
 coating without a NIOSH approved air purifying respirator with
 particulate filters or appropriate ventilation, and gloves.

***** SECTION 8 - Exposure Controls or Personal Protection *****

Engineering controls and work practices:

Ventilation:

Provide sufficient ventilation in volume and pattern to keep
 contaminants below applicable exposure limits.

Personal Protective Equipment:

Personal protective equipment should be worn to prevent contact with

***** SECTION 8 - Exposure Controls or Personal Protection *****
Cont'd

eyes, skin or clothing.
 Respiratory:

Do not breathe vapors or mists. Wear an appropriate, properly fitted
 NIOSH approved respirator during application and until all vapors and
 spray mists are exhausted unless air monitoring demonstrates
 vapor/mist levels are below applicable limits. If respirators are
 required, use a properly fitted air-purifying respirator with organic
 vapor cartridges (NIOSH approved TC-23C) and particulate filter
 (NIOSH TC-84A). In confined spaces, or in situations where
 continuous spray operations are typical, or if proper air-purifying
 respirator fit is not possible, wear a positive pressure,
 supplied-air respirator (NIOSH TC-19C). In all cases, follow
 respirator manufacturer's directions for respirator use.

Protective clothing:

Neoprene gloves and coveralls are recommended.

Eye protection:

Desirable in all industrial situations. Goggles are preferred to
 prevent eye irritation. If safety glasses are substituted, include
 splash guard or side shields.

***** SECTION 9 - Physical and Chemical Properties *****

Evaporation Rate	Slower than Ether
Vapor Pressure of principal solvent	0.96 mm @ 200 Deg C
Solubility of solvent in water	NIL
Vapor density of principal solvent (Air = 1)	4.00
Approx. Boiling range	116 - 204 DEG (C)
Approx. Freezing range	-24 - 330 DEG (C)
Gallon weight (lbs/gal)	9.12
Specific gravity	1.09
Percent volatile by volume	85.51
Percent volatile by weight	74.00
Percent solids by volume	14.49
Percent solids by weight	26.00
Physical state	Liquid
pH (waterborne systems only)	Not Applicable
VOC* less exempt (lbs/gal)	6.7
VOC* as packaged (lbs/gal)	6.7

* VOC less exempt (theoretical) and VOC as packaged (theoretical)
 are based upon the VOC of the packaged material at the point of
 manufacture.

***** SECTION 10 - Stability and Reactivity *****

Stability:

Stable

Incompatibility (materials to avoid):

010-000464

420- 106

DUPONT MATERIAL SAFETY DATA SHEET

Page: 1
04/24/2006

***** SECTION 1 - Product and Company Identification *****

Manufacturer: E.I. DuPont de Nemours & Co.
Fluoroproducts
Wilmington, DE, 19898

Telephone: Product Information: (800) 441-7515
Medical Emergency: (800) 441-3637
Transportation Emergency: (800) 424-9300 (CHEMTREC)

PRODUCT NAME: ONE COAT SPARKLING GRAY

PRODUCT CODE: 420- 106 031208

Chemical Family: No Information Available

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rights reserved. Copies may be made only for those using
DuPont products.

***** SECTION 2 - Composition, Information on Ingredients *****

CAS #	Ingredient	Concentration/ Range (%)	Exposure Limits**
7429-90-5	ALUMINUM	1	A 10.0 mg/m3 Particulate A 5.0 mg/m3 Dust O 15.0 mg/m3 Total Dust O 5.0 mg/m3 Respirable Dust
108-10-1	METHYL ISOBUTYL KETONE	23	A 75.0 ppm 15 min STEL A 50.0 ppm O 100.0 ppm
9002-84-0	POLYTETRAFLUOROETHYLENE		O 15.0 mg/m3 Total Dust PNOR O 5.0 mg/m3 Respirable Dust PNOR D 10.0 mg/m3 Total Dust D 5.0 mg/m3 Respirable Dust A None
25608-63-3	POLYETHERSULFONE		S 10.0 mg/m3 A None

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***** SECTION 2 - Composition, Information on Ingredients *****
Cont'd

			O	None
872-50-4	METHYL PYRROLIDONE	54	A	5.0 ppm
				8 & 12 hour TWA
			D	5.0 ppm
				8 & 12 hour TWA
				Skin
			O	None

OSHA-HAZARDOUS? Yes

** A = ACGIH, O = OSHA, D = Dupont, S = Supplier (For additional definition of terms, see Section 16). Limits are 8-hour TWA unless otherwise specified.

***** SECTION 3 - Hazards Information *****

Emergency Overview:

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Potential Health Effects:

Inhalation:

May cause nose and throat irritation. May cause nervous system depression characterized by the following progressive steps: headache, dizziness, nausea, staggering gait, confusion, unconsciousness. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ingestion:

May result in gastrointestinal distress.

Skin or eye contact:

May cause irritation or burning of the eyes. Repeated or prolonged liquid contact may cause skin irritation with discomfort and dermatitis.

Other Potential Health Effects in addition to those listed above:

METHYL ISOBUTYL KETONE

The following medical conditions may be aggravated by exposure:
asthma respiratory disease eye disorders pulmonary conditions
skin disorders

Repeated or prolonged skin contact may cause any of the following:
dryness cracking of the skin defatting

Inhalation may cause any of the following: dizziness stupor
(central nervous system depression) drowsiness respiratory tract
irritation

Do not transfer contents to bottles or unlabeled containers. Wash thoroughly after handling and before eating or smoking. Do not store above 120 deg F.

OSHA/NFPA Storage Classification: IC

Other precautions:

If material is a coating: do not sand, flame cut, braze or weld dry coating without a NIOSH approved air purifying respirator with particulate filters or appropriate ventilation, and gloves.

***** SECTION 8 - Exposure Controls or Personal Protection *****

Engineering controls and work practices:

Ventilation:

Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits.

Personal Protective Equipment:

Personal protective equipment should be worn to prevent contact with eyes, skin or clothing.

Respiratory:

Do not breathe vapors or mists. Wear an appropriate, properly fitted NIOSH approved respirator during application and until all vapors and spray mists are exhausted unless air monitoring demonstrates vapor/mist levels are below applicable limits. If respirators are required, use a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH approved TC-23C) and particulate filter (NIOSH TC-84A). In confined spaces, or in situations where continuous spray operations are typical, or if proper air-purifying respirator fit is not possible, wear a positive pressure, supplied-air respirator (NIOSH TC-19C). In all cases, follow respirator manufacturer's directions for respirator use.

Protective clothing:

Neoprene gloves and coveralls are recommended.

Eye protection:

Desirable in all industrial situations. Goggles are preferred to prevent eye irritation. If safety glasses are substituted, include splash guard or side shields.

***** SECTION 9 - Physical and Chemical Properties *****

Evaporation Rate	Slower than Ether
Vapor Pressure of principal solvent	0.96 mm @ 200 Deg C
Solubility of solvent in water	NIL
Vapor density of principal solvent (Air = 1)	4.00
Approx. Boiling range	116 - 204 DEG (C)
Approx. Freezing range	-24 - 330 DEG (C)
Gallon weight (lbs/gal)	8.74
Specific gravity	1.05

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DUPONT MATERIAL SAFETY DATA SHEET

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***** SECTION 9 - Physical and Chemical Properties *****

Cont'd

Percent volatile by volume	86.75
Percent volatile by weight	77.88
Percent solids by volume	13.25

Percent solids by weight	22.12
Physical state	Liquid
pH (waterborne systems only)	Not Applicable
VOC* less exempt (lbs/gal)	6.8
VOC* as packaged (lbs/gal)	6.8

* VOC less exempt (theoretical) and VOC as packaged (theoretical) are based upon the VOC of the packaged material at the point of manufacture.

***** SECTION 10 - Stability and Reactivity *****

Stability:

Stable

Incompatibility (materials to avoid):

None reasonably foreseeable

Hazardous decomposition products:

CO, CO2, smoke, and oxides of any heavy metals that are reported in "Composition, Information on Ingredients" section.

Hazardous polymerization:

Will not occur.

Sensitivity to static discharge:

Solvent vapors in air may explode if static grounding and bonding is not used during transfer of this product.

Sensitivity to mechanical impact: None Known

***** SECTION 11 - Toxicological Information *****

No Information Available

***** SECTION 12 - Ecological Information *****

No Information Available

***** SECTION 13 - Disposal Considerations *****

Waste disposal method:

Do not allow material to contaminate ground water systems. Incinerate or otherwise dispose of waste material in accordance with Federal, State, Provincial, and local requirements. Do not incinerate in closed containers.

***** SECTION 14 - Transportation Information *****

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DUPONT MATERIAL SAFETY DATA SHEET

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***** SECTION 14 - Transportation Information *****

Cont'd

No Information Available

***** SECTION 15 - Regulatory Information *****

TSCA Status:

Material Safety Data Sheet **POR-15, Inc.** PO Box 1235, Morristown, NJ 07962-1235

Emergency telephone numbers: Chemtrec 800-424-9300, 973-887-1999, 800-457-6715, 973-539-3236

PRODUCT NAME: POR-15 Rust Preventive Paint
CHEMICAL NAME: Isocyanate Prepolymer based on MDI
CHEMICAL FAMILY: Solution Aromatic Isocyanates (26447-40-5)

FORMULA: Mixture
T.S.C.A. STATUS: Ok
TRADE NAMES/SYNONYMS: POR-15 Rust Paint, POR-15 Paint

II. HAZARDOUS INGREDIENTS

Diphenylmethane Diisocyanate(MDI)(26447-40-5):ca 20
Naptha Petroleum (68333-23-3)

Current TLV: ACGIH: 0.005ppm(0.2 mg/m³)
Ceiling value OSHA (PEL): Same

III. PHYSICAL DATA

BOILING POINT: 232 Degrees F
VAPOR PRESSURE: 38mm Hg
VAPOR DENSITY: (Air = 1) 4.5
SOLUBILITY IN WATER: Nil
ODOR: Aromatic LBS. PER GALLON: 8.9
VISCOSITY: Range @ 77° F/25°C: 200-500 CPS

SPECIFIC GRAVITY: (Water =1) 1.6
% VOLATILE BY VOLUME: 26%
EVAPORATION RATE (Ether = 1): For solvent, 4.5
COLOR: Black, Silver, Clear (light brown trans)
VOLATILE ORGANICS: For POR-15 Clear - 236 grams per liter
For POR-15 Silver & Black - 223 grams per liter

IV. FIRE & EXPLOSION HAZARD DATA

FLASH POINT (Method used): TCC 104 Degrees F
EXTINGUISHING MEDIA: Dry chemical (e.g.monoammonium phosphate, potassium sulfate, and potassium chloride, carbon dioxide, high expansion (proteninic) chemical foam, water spray for large fires.
SPECIAL FIRE FIGHTING PROCEDURES/USUAL FIRE OR EXPLOSION HAZARDS: Full emergency equipment with self-contained breathing apparatus should be worn by firefighters. During a fire, MDI vapors and other irritating, toxic gases may be generated by thermal decomposition (see section VIII). At temperatures greater than 400 degrees F (204 degrees C), polymeric MDI can polymerize and decompose. Use cold water to cool fire-exposed containers.
HAZARD CLASS: B HEALTH: 3 FIRE: 2 REACTIVITY: 1 FLAMMABLE LIMITS LEL: 1% FLAMMABLE LIMITS UEL: 7.1%

V. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: For isocyanates, 0.02ppm; for solvent, 200ppm
EFFECTS OF OVEREXPOSURE: Eyes-severe irritation; tearing skin, discoloration-drying; breathing-irritation, dizziness, unconsciousness (for solvent). For isocyanates, coughing, irritation of mucous membranes and respiratory tract.
SKIN EFFECTS: Slight to moderate irritation(MDI); skin sensitizer in guinea pigs(MDI). No conclusive evidence has been developed to indicate that MDI or POR-15 is carcinogenic, teratogenic or that either one causes reproductive effects in animals or humans. MDI has been reported by NIOSH to be mutagenic to Salmonella Typhimurium bacteria in the presence of a mammalian liver activation system. There is not full agreement in the scientific community on the significance of these Ames test results and their relationship to human safety in assessing the risk of cancer in man. A commitment has been made to perform an animal life-time Inhalation study on polymeric MDI.
HUMAN EFFECTS OF OVEREXPOSURE: INHALATION-Inhalation of MDI vapors or aerosols in concentrations above 0.02ppm can produce irritation of the mucous membranes in the respiratory tract, running nose, sore throat, productive cough and a reduction of lung function. Extensive exposures to concentrations well above the TLV could lead to bronchitis, bronchial spasm and pulmonary edema. These effects are usually reversible. However, due to low volatility, high exposures are not anticipated except if the material is overheated or sprayed as an aerosol into the air. Hypersensitivity pneumonitis has also been reported. Another type of response is hyperactivity or hypersensitization. Persons with a preexisting unspecific bronchial hyperactivity or persons with a specific isocyanate hypersensitivity (as a result of previous repeated overexposure or a single large dosage) will respond to small isocyanate concentrations at levels well below the TLV of 0.02ppm. Symptoms could be immediate or delayed and include chest tightness, respiratory distress or asthmatic attack. SKIN: Polymeric MDI reacts with skin protein and tissue moisture and can cause localized irritation as well as discoloration. Prolonged contact could produce reddening, swelling, or blistering and, in some individuals, skin sensitization resulting in dermatitis. EYES: Liquid, vapors, or aerosols are irritating to the eyes and can cause lachrymation (tearing effect). Corneal damage can occur; however, indications are that the damage is reversible and does not result in permanent injury. INGESTION: Ingestion could result in irritation and some corrosive action in the

VI. EMERGENCY & FIRST AID PROCEDURES

EYE CONTACT: Flush with clean, lukewarm water(low pressure) for at least 15 min., occasionally lifting eyelids; obtain medical attention.
SKIN CONTACT: Remove contaminated clothing. Wash affected areas thoroughly with soap and water. Wash contaminated clothing thoroughly before re-use.
INHALATION: Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic.
INGESTION: Do not induce vomiting. Give 250 ml of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult physician.

VII. PROTECTION RECOMMENDATIONS

EYE PROTECTION: Safety glasses with side shields, splash goggles or face shield. Contact lenses should not be worn. SKIN PROTECTION: Chemical-resistant gloves. Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area covered to a minimum. RESPIRATORY PROTECTION: Use respirator that is recommended or approved for use in isocyanate containing environments (air purifying or fresh air supplied). Consider type of application and environmental concentrations. In spray applications you must protect against exposure to both vapor and spray mist. An air-supplied respirator is strongly recommended for spray application. Observe OSHA regulations for respirator use 29 CFR, 1910.134. VENTILATION: Ventilation as required to maintain air concentrations below TLV's. If material is spray-applied, ventilation should be provided and air supplied respirators worn. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

VIII. REACTIVITY DATA

STABILITY: Stable under normal conditions. POLYMERIZATION: Will not occur in unopened cans under normal conditions. CONDITIONS TO AVOID: Temperatures below 32 degrees F (0°C) or above 122 degrees F (50 degrees C). To maintain freshness: Avoid contact with water, alcohols, amines, strong bases, metal compounds or surface active materials. HAZARDOUS DECOMPOSITION(typical of all paints): By fire, carbon dioxide, CO, oxides of nitrogen, traces of HCN, MDI, and elements unknown.

IX. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Eliminate source of ignition of vapors, wear protective clothing while cleaning up; absorb on sand, clay, or absorbent material. WASTE DISPOSAL METHOD: Dispose of in accordance with local, state, and federal regulations. Incineration is preferred. Decontaminate empty containers.

X. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: NIOSH/MSHA approved respirator. EYE PROTECTION: Goggles or face mask. VENTILATION: Use in well-ventilated areas only. Have adequate general exhaust. PROTECTIVE GLOVES: Solvent protective gloves. OTHER PROTECTIVE EQUIPMENT: Self-contained breathing apparatus if threshold limit is exceeded.

XI. SPECIAL PRECAUTIONS & STORAGE DATA

STORAGE TEMPERATURE (min/max): 32 degrees F (0 degrees C)/122 degrees F (50 degrees C)
AVERAGE SHELF LIFE: 6 months to 2 years (unopened can) @ 77 degrees F (25 degrees C)
SPECIAL SENSITIVITY(heat, light, moisture): If container is exposed to high heat, container may pressurize slightly. If container is opened and used as supply can, do not re-seal can as pressure may build up due to reaction producing carbon dioxide, which might cause re-sealed container to pressurize and burst.
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store in tightly closed container and protect from moisture and foreign materials. At maximum storage temperatures noted, material may slowly polymerize without hazard. Ideal storage temperature range is 50-81 degrees F (10 - 27 degrees C).

010-000141

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DUPONT MATERIAL SAFETY DATA SHEET

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***** SECTION 1 - Product and Company Identification *****

Manufacturer: E.I. DuPont de Nemours & Co.
Fluoroproducts
Wilmington, DE, 19898

Telephone: Product Information: (800) 441-7515
Medical Emergency: (800) 441-3637
Transportation Emergency: (800) 424-9300 (CHEMTREC)

PRODUCT NAME: PRIMER BLACK

PRODUCT CODE: 420- 703 041216

Chemical Family: No Information Available

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rights reserved. Copies may be made only for those using
DuPont products.

***** SECTION 2 - Composition, Information on Ingredients *****

CAS #	Ingredient	Concentration/ Range (%)	Exposure Limits**
7727-43-7	BARIUM SULFATE		A 10.0 mg/m3 Total Dust A 5.0 mg/m3 Respirable Dust O 15.0 mg/m3 Total Dust O 5.0 mg/m3 Respirable Dust D 10.0 mg/m3 Total Dust
108-10-1	METHYL ISOBUTYL KETONE	16	A 75.0 ppm 15 min STEL A 50.0 ppm O 100.0 ppm
123-42-2	DIACETONE ALCOHOL		A 50.0 ppm TLV O 50.0 ppm TWA
1333-86-4	CARBON BLACK	1.0	A 3.5 mg/m3 O 3.5 mg/m3 D 0.5 mg/m3 8 & 12 hour TWA
25608-63-3	POLYETHERSULFONE		S 10.0 mg/m3 A None

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***** SECTION 2 - Composition, Information on Ingredients *****
Cont'd

		O	None
Not Avail	POLYAMIDE IMIDE POLYMER	A	None
		O	None
25067-11-2	FLUORINATED ETHYLENE PRO- PYLENE RESIN	O	15.0 mg/m3 Total Dust PNOR
		O	5.0 mg/m3 Respirable Dust PNOR
		D	10.0 mg/m3 8 & 12 hour TWA Total Dust
		D	5.0 mg/m3 8 & 12 hour TWA Respirable Dust
		A	None
872-50-4	METHYL PYRROLIDONE	50	A
			5.0 ppm 8 & 12 hour TWA
		D	5.0 ppm 8 & 12 hour TWA Skin
		O	None

OSHA HAZARDOUS? Yes

** A = ACGIH, O = OSHA, D = Dupont, S = Supplier (For additional definition of terms, see Section 16). Limits are 8-hour TWA unless otherwise specified.

***** SECTION 3 - Hazards Information *****

Emergency Overview:

WARNING! FLAMMABLE LIQUID AND VAPOR. VAPORS AND SPRAY MIST HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS SUCH AS DIZZINESS, HEADACHE, OR NAUSEA. MAY CAUSE NOSE, THROAT, EYE AND SKIN IRRITATION. CAN BE ABSORBED THROUGH THE SKIN.

Potential Health Effects:

Inhalation:

May cause nose and throat irritation. May cause nervous system depression characterized by the following progressive steps: headache, dizziness, nausea, staggering gait, confusion, unconsciousness. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ingestion:

May result in gastrointestinal distress.

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DUPONT MATERIAL SAFETY DATA SHEET

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Personal Protective Equipment:

Personal protective equipment should be worn to prevent contact with eyes, skin or clothing.

Respiratory:

Do not breathe vapors or mists. Wear an appropriate, properly fitted NIOSH approved respirator during application and until all vapors and spray mists are exhausted unless air monitoring demonstrates vapor/mist levels are below applicable limits. If respirators are required, use a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH approved TC-23C) and particulate filter (NIOSH TC-84A). In confined spaces, or in situations where continuous spray operations are typical, or if proper air-purifying respirator fit is not possible, wear a positive pressure, supplied-air respirator (NIOSH TC-19C). In all cases, follow respirator manufacturer's directions for respirator use.

Protective clothing:

Neoprene gloves and coveralls are recommended.

Eye protection:

Desirable in all industrial situations. Goggles are preferred to prevent eye irritation. If safety glasses are substituted, include splash guard or side shields.

***** SECTION 9 - Physical and Chemical Properties *****

Evaporation Rate	Slower than Ether
Vapor Pressure of principal solvent	0.96 mm @ 200 Deg C
Solubility of solvent in water	NIL
Vapor density of principal solvent (Air = 1)	4.00
Approx. Boiling range	116 - 204 DEG (C)
Approx. Freezing range	-24 - 1350 DEG (C)
Gallon weight (lbs/gal)	9.47
Specific gravity	1.14
Percent volatile by volume	83.13
Percent volatile by weight	69.60
Percent solids by volume	16.87
Percent solids by weight	30.40
Physical state	Liquid
pH (waterborne systems only)	Not Applicable
VOC* less exempt (lbs/gal)	6.6
VOC* as packaged (lbs/gal)	6.6

* VOC less exempt (theoretical) and VOC as packaged (theoretical) are based upon the VOC of the packaged material at the point of manufacture.

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DUPONT MATERIAL SAFETY DATA SHEET

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***** SECTION 10 - Stability and Reactivity *****

Stability:

Stable

Incompatibility (materials to avoid):

None reasonably foreseeable

Hazardous decomposition products:

CO, CO2, smoke, and oxides of any heavy metals that are reported in

010-000334

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DUPONT MATERIAL SAFETY DATA SHEET

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***** SECTION 1 - Product and Company Identification *****

Manufacturer: E.I. DuPont de Nemours & Co.
Fluoroproducts
Wilmington, DE, 19898

Telephone: Product Information: (800) 441-7515
Medical Emergency: (800) 441-3637
Transportation Emergency: (800) 424-9300 (CHEMTREC)

PRODUCT NAME: ONE COAT/PRIMER BLACK

PRODUCT CODE: 959- 203 031208

Chemical Family: No Information Available

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***** SECTION 2 - Composition, Information on Ingredients *****

CAS #	Ingredient	Concentration/ Range (%)	Exposure Limits**
108-10-1	METHYL ISOBUTYL KETONE	17	A 75.0 ppm 15 min STEL A 50.0 ppm O 100.0 ppm
78-83-1	ISOBUTYL ALCOHOL		A 50.0 ppm O 100.0 ppm
68002-21-1	MELAMINE FORMALDEHYDE RE- SIN		A None O None
1333-86-4	CARBON BLACK	2.8	A 3.5 mg/m3 O 3.5 mg/m3 D 0.5 mg/m3 8 & 12 hour TWA
50-00-0	FORMALDEHYDE	0.3	A 0.3 ppm CEIL O 2.0 ppm 15 min STEL O 0.7 ppm D 1.0 ppm 15 min TWA D 0.5 ppm 8 & 12 hour TWA
68002-25-5	MELAMINE RESIN		A None O None

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***** SECTION 2 - Composition, Information on Ingredients *****
Cont'd

64742-89-8	VM&P NAPHTHA		A 300.0 ppm O 400.0 ppm 15 min STEL O 300.0 ppm D 100.0 ppm
71-36-3	N-BUTYL ALCOHOL	3	A 20.0 ppm O 100.0 ppm D 50.0 ppm 15 min TWA D 25.0 ppm
Not Avail	POLYAMIDE IMIDE POLYMER		A None O None
25067-11-2	FLUORINATED ETHYLENE PRO- PYLENE RESIN		O 15.0 mg/m3 Total Dust PNOR O 5.0 mg/m3 Respirable Dust PNOR D 10.0 mg/m3 8 & 12 hour TWA Total Dust D 5.0 mg/m3 8 & 12 hour TWA Respirable Dust A None
872-50-4	METHYL PYRROLIDONE	47	A 5.0 ppm 8 & 12 hour TWA D 5.0 ppm 8 & 12 hour TWA Skin O None

OSHA HAZARDOUS? Yes

** A = ACGIH, O = OSHA, D = Dupont, S = Supplier (For additional definition of terms, see Section 16). Limits are 8-hour TWA unless otherwise specified.

***** SECTION 3 - Hazards Information *****

Emergency Overview:

WARNING! FLAMMABLE LIQUID AND VAPOR. VAPORS AND SPRAY MIST HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS SUCH AS DIZZINESS, HEADACHE, OR NAUSEA. MAY CAUSE NOSE, THROAT, EYE AND SKIN IRRITATION. CAN BE ABSORBED THROUGH THE SKIN.

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Other precautions:

If material is a coating: do not sand, flame cut, braze or weld dry coating without a NIOSH approved air purifying respirator with particulate filters or appropriate ventilation , and gloves.

***** SECTION 8 - Exposure Controls or Personal Protection *****

Engineering controls and work practices:

Ventilation:

Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits.

Personal Protective Equipment:

Personal protective equipment should be worn to prevent contact with eyes, skin or clothing.

Respiratory:

Do not breathe vapors or mists. Wear an appropriate, properly fitted NIOSH approved respirator during application and until all vapors and spray mists are exhausted unless air monitoring demonstrates vapor/mist levels are below applicable limits. If respirators are required, use a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH approved TC-23C) and particulate filter (NIOSH TC-84A). In confined spaces, or in situations where continuous spray operations are typical, or if proper air-purifying respirator fit is not possible, wear a positive pressure, supplied-air respirator (NIOSH TC-19C). In all cases, follow respirator manufacturer's directions for respirator use.

Protective clothing:

Neoprene gloves and coveralls are recommended.

Eye protection:

Desirable in all industrial situations. Goggles are preferred to prevent eye irritation. If safety glasses are substituted, include splash guard or side shields.

***** SECTION 9 - Physical and Chemical Properties *****

Evaporation Rate	Slower than Ether
Vapor Pressure of principal solvent	No Data Available
Solubility of solvent in water	NIL
Vapor density of principal solvent (Air = 1)	No Data Available
Approx. Boiling range	116 - 204 DEG (C)
Approx. Freezing range	-24 - -23 DEG (C)
Gallon weight (lbs/gal)	8.61

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***** SECTION 9 - Physical and Chemical Properties *****

Cont'd

Specific gravity	1.03
Percent volatile by volume	82.43
Percent volatile by weight	73.44
Percent solids by volume	17.57
Percent solids by weight	26.56
Odor	Characteristic Paint Odor
Appearance	Liquid Paint
Physical state	Liquid

pH (waterborne systems only)	Not Applicable
VOC* less exempt (lbs/gal)	6.3
VOC* as packaged (lbs/gal)	6.3

* VOC less exempt (theoretical) and VOC as packaged (theoretical) are based upon the VOC of the packaged material at the point of manufacture.

***** SECTION 10 - Stability and Reactivity *****

Stability:

Stable

Incompatibility (materials to avoid):

None reasonably foreseeable

Hazardous decomposition products:

CO, CO₂, smoke, and oxides of any heavy metals that are reported in "Composition, Information on Ingredients" section.

Hazardous polymerization:

Will not occur.

Sensitivity to static discharge:

Solvent vapors in air may explode if static grounding and bonding is not used during transfer of this product.

Sensitivity to mechanical impact: None Known

***** SECTION 11 - Toxicological Information *****

No Information Available

***** SECTION 12 - Ecological Information *****

No Information Available

***** SECTION 13 - Disposal Considerations *****

Waste disposal method:

Do not allow material to contaminate ground water systems. Incinerate or otherwise dispose of waste material in accordance with Federal, State, Provincial, and local requirements. Do not incinerate in closed containers.

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***** SECTION 14 - Transportation Information *****

No Information Available

***** SECTION 15 - Regulatory Information *****

TSCA Status:

In compliance with TSCA Inventory requirements for commercial purposes.

DSL Status:

All components of the mixture are listed on the DSL.

Photochemical Reactivity: Photochemically reactive

010-000563

TN- 8595

DUPONT MATERIAL SAFETY DATA SHEET

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***** SECTION 1 - Product and Company Identification *****

Manufacturer: E.I. DuPont de Nemours & Co.
Fluoroproducts
Wilmington, DE, 19898

Telephone: Product Information: (800) 441-7515
Medical Emergency: (800) 441-3637
Transportation Emergency: (800) 424-9300 (CHEMTREC)

PRODUCT NAME: THINNER

PRODUCT CODE: TN- 8595 040527

Chemical Family: No Information Available

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***** SECTION 2 - Composition, Information on Ingredients *****

CAS #	Ingredient	Concentration/ Range (%)	Exposure Limits**
108-10-1	METHYL ISOBUTYL KETONE	50	A 75.0 ppm 15 min STEL A 50.0 ppm O 100.0 ppm
872-50-4	METHYL PYRROLIDONE	50	A 5.0 ppm 8 & 12 hour TWA D 5.0 ppm 8 & 12 hour TWA Skin O None

OSHA HAZARDOUS? Yes

** A = ACGIH, O = OSHA, D = Dupont, S = Supplier (For additional definition of terms, see Section 16). Limits are 8-hour TWA unless otherwise specified.

***** SECTION 3 - Hazards Information *****

Emergency Overview:

WARNING! FLAMMABLE LIQUID AND VAPOR. VAPORS AND SPRAY MIST HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS SUCH AS DIZZINESS, HEADACHE, OR NAUSEA. MAY CAUSE NOSE, THROAT, EYE AND SKIN IRRITATION. CAN BE ABSORBED THROUGH THE SKIN.

Potential Health Effects:

Inhalation:

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Engineering controls and work practices:

Ventilation:

Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits.

Personal Protective Equipment:

Personal protective equipment should be worn to prevent contact with eyes, skin or clothing.

Respiratory:

Do not breathe vapors or mists. Wear an appropriate, properly fitted NIOSH approved respirator during application and until all vapors and spray mists are exhausted unless air monitoring demonstrates vapor/mist levels are below applicable limits. If respirators are required, use a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH approved TC-23C) and particulate filter (NIOSH TC-84A). In confined spaces, or in situations where continuous spray operations are typical, or if proper air-purifying respirator fit is not possible, wear a positive pressure, supplied-air respirator (NIOSH TC-19C). In all cases, follow respirator manufacturer's directions for respirator use.

Protective clothing:

Neoprene gloves and coveralls are recommended.

Eye protection:

Desirable in all industrial situations. Goggles are preferred to prevent eye irritation. If safety glasses are substituted, include splash guard or side shields.

***** SECTION 9 - Physical and Chemical Properties *****

Evaporation Rate	Slower than Ether
Vapor Pressure of principal solvent	No Data Available
Solubility of solvent in water	NIL
Vapor density of principal solvent (Air = 1)	No Data Available
Approx. Boiling range	116 - 204 DEG (C)
Approx. Freezing range	-24 - -23 DEG (C)
Gallon weight (lbs/gal)	7.46
Specific gravity	0.89
Percent volatile by volume	100.00
Percent volatile by weight	100.00
Percent solids by volume	0.00
Percent solids by weight	0.00
Physical state	Liquid
pH (waterborne systems only)	Not Applicable
VOC* less exempt (lbs/gal)	7.5
VOC* as packaged (lbs/gal)	7.5

* VOC less exempt (theoretical) and VOC as packaged (theoretical) are based upon the VOC of the packaged material at the point of manufacture.

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DUPONT MATERIAL SAFETY DATA SHEET

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***** SECTION 10 - Stability and Reactivity *****

Stability:

Stable

NxEdge PTC Modification
HMIS: H=1, F=1, R=0, PPE=E

FP Area MSDS
Powder Coating

WHITFORD CORPORATION
P.O. BOX 2347 - WEST CHESTER, PA 19380

MATERIAL SAFETY DATA SHEET
for
COATINGS, RESINS, and RELATED MATERIALS

SECTION I - PRODUCT IDENTIFICATION

Corporate Address:
33 Sproul Road
Frazer, PA 19355

Trade Name & Synonyms:
DYKOR POWDER

Emergency Telephone Number: (610) 296-3200
24 Hours a Day

Formula:
820 (HALAR 6014 ECTFE) *CLEAR*

P.C. Number: E2080A

Telex: N/A

Date of Preparation: 28 September 1994

FAX: (610) 647-4849

Supercedes: None

IMPORTANT: BEFORE USING DYKOR POWDER 820 (HALAR 6014 ECTFE),
HAVE ALL PROCESSING PERSONNEL READ THIS DOCUMENT!

SECTION II - HAZARDOUS INGREDIENTS

Chemical(s) with CAS RN and vapor pressure (if applicable)	<u>OCCUPATIONAL EXPOSURE LIMITS</u>		
	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>Manufacturer's Recommendation</u>
ECTFE FLUOROPOLYMER 25101-45-5	Not established	Not established	No recommendation

SECTION III - PHYSICAL DATA

Appearance	White powder
Boiling point (range) . . .	Not Applicable degrees C
Vapor density	Lighter than air
Evaporation rate	Slower than ether
Specific gravity (H2O = 1):	1.60
Percent volatile by volume:	0 %

HALAR® 6814

SOLVAY SOLEXIS, Inc.
10 Leonards Lane
Thorofare, NJ 08086
856-853-8119

To: Cael
From: Tom

Section 1 - Chemical product and Company information

Date Revised: December 23, 2002
Product Name: HALAR® 6814
Chemical Name: Ethylene/Chlorotrifluoroethylene/Hexafluoroisobutylene copolymer blend
Chemical Family: Chlorofluoropolymer blend
Synonyms: H/CITE/HFIB and metal oxide additives
Emergency Telephone: 800-424-9300 (CHEMTREC, 24 hours)
856-853-8119

Emergency Overview:

Gray powder. Thermal decomposition will generate hydrogen fluoride (HF) and hydrogen chloride (HCl), which are corrosive.

Section 2 - Compositional Information

Name:	CAS#	Approximate Weight (% wt.):
Copolymer of Ethylene, Chlorotrifluoroethylene, and Hexafluoroisobutylene	54302-04-4	Proprietary
Copper Oxide	1317-39-1	Proprietary
Zinc oxide	1314-13-2	Proprietary
Titanium Dioxide	13463-67-7	Proprietary
Copper Chromite Black Spinel	68186-91-4	Proprietary

Section 3 - Potential Health Effects

Effects of Overexposure:

Eye Contact

Eye contact with dust can cause mechanical irritation.

Skin Contact

Skin contact with dust can cause irritation.

Inhalation

Inhalation of dust may cause irritation of the mucous membranes and respiratory tract.

Ingestion

Not an expected exposure route. Ingestion may cause nausea, vomiting, abdominal pain and metallic taste.

DUPONT MATERIAL SAFETY DATA SHEET

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***** SECTION 1 - Product and Company Identification *****

Manufacturer: E.I. DuPont de Nemours & Co.
Fluoroproducts
Wilmington, DE, 19898

Telephone: Product Information: (800) 441-7515
Medical Emergency: (800) 441-3637
Transportation Emergency: (800) 424-9300 (CHEMTREC)

PRODUCT NAME: HIGH BUILD PFA CLEAR

PRODUCT CODE: 532- 5450

Chemical Family: No Information Available 990622

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***** SECTION 2 - Composition, Information on Ingredients *****

CAS #	Ingredient	Concentration/ Range (%)	Exposure Limits**
7440-31-5	METALLIC TIN		A 2.0 mg/m3 O None
26655-00-5	PERFLUOROALKOXY RESIN		A None O None

OSHA HAZARDOUS? Yes

** A = ACGIH, O = OSHA, D = Dupont, S = Supplier (For additional definition of terms, see Section 16). Limits are 8-hour TWA unless otherwise specified.

***** SECTION 3 - Hazards Information *****

Emergency Overview:

CAUTION! LOW HAZARD FOR USUAL INDUSTRIAL OR COMMERCIAL HANDLING.

Do not exceed recommended baking temperatures. Baking ovens must be properly ventilated. At temperatures above 400 C (750 F), small amounts of hydrogen fluoride can be evolved; amounts increase as temperatures increase. Hydrogen fluoride is toxic and can cause skin and eye irritation. (3ppm - ceiling ACGIH-TLV). High concentrations can cause lung damage, pulmonary edema, burns. Some vegetation is particularly sensitive to damage by hydrogen fluoride and attention must be given to exhaust ventilation. Explosive reaction may occur above 800 degrees F with finely divided fluorocarbon and metal powder (aluminum or magnesium). Operations such as grinding, buffing or grit blasting may generate such mixtures. Avoid any dust buildup with fluorocarbons and metal

This MSDS format adheres to the standards and regulatory requirements of United States and may not meet regulatory requirements in other countries.

DUPONT MATERIAL SAFETY DATA SHEET

Page: 1
04/20/2002

***** SECTION 1 - Product and Company Identification *****

Manufacturer: E.I. DuPont de Nemours & Co.
Fluoroproducts
Wilmington, DE, 19898

Telephone: Product Information: (800) 441-7515
Medical Emergency: (800) 441-3637
Transportation Emergency: (800) 424-9300 (CHEMTREC)

PRODUCT NAME: PFA POWDER CLEAR

PRODUCT CODE: 532- 5010 000210

Chemical Family: Clearcoat-Powder

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***** SECTION 2 - Composition, Information on Ingredients *****

CAS #	Ingredient	Concentration/ Range (%)	Exposure Limits**
26655-00-5	PERFLUOROALKOXY RESIN		A None O None

OSHA HAZARDOUS? No

** A = ACGIH, O = OSHA, D = Dupont, S = Supplier (For additional definition of terms, see Section 16). Limits are 8-hour TWA unless otherwise specified.

***** SECTION 3 - Hazards Information *****

Emergency Overview:

CAUTION: LOW HAZARD FOR USUAL INDUSTRIAL OR COMMERCIAL HANDLING.

Do not exceed recommended baking temperatures. Baking ovens must be properly ventilated. At temperatures above 400 C (750 F), small amounts of hydrogen fluoride can be evolved; amounts increase as temperatures increase. Hydrogen fluoride is toxic and can cause skin and eye irritation. (3ppm - ceiling ACGIH-TLV). High concentrations can cause lung damage, pulmonary edema, burns. Some vegetation is particularly sensitive to damage by hydrogen fluoride and attention must be given to exhaust ventilation.

Explosive reaction may occur above 800 degrees F with finely divided fluorocarbon and metal powder (aluminum or magnesium). Operations such as grinding, buffing or grit blasting may generate such mixtures. Avoid any dust buildup with fluorocarbons and metal mixtures.

Potential Health Effects:

This MSDS format adheres to the standards and regulatory requirements of United States and may not meet regulatory requirements in other countries.

DUPONT MATERIAL SAFETY DATA SHEET

Page: 1
06/29/2002

***** SECTION 1 - Product and Company Identification *****

Manufacturer: E.I. DuPont de Nemours & Co.
Fluoroproducts
Wilmington, DE, 19898

Telephone: Product Information: (800) 441-7515
Medical Emergency: (800) 441-3637
Transportation Emergency: (800) 424-9300 (CHEMTREC)

PRODUCT NAME: PFA POWDER CLEAR

PRODUCT CODE: 532- 7000 000210

Chemical Family: No Information Available

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***** SECTION 2 - Composition, Information on Ingredients *****

CAS #	Ingredient	Concentration/ Range (%)	Exposure Limits**
26655-00-5	PERFLUOROALKOXY RESIN		A None O None

OSHA HAZARDOUS? Yes

** A = ACGIH, O = OSHA, D = Dupont, S = Supplier (For additional definition of terms, see Section 16). Limits are 8-hour TWA unless otherwise specified.

***** SECTION 3 - Hazards Information *****

Emergency Overview:

CAUTION! LOW HAZARD FOR USUAL INDUSTRIAL OR COMMERCIAL HANDLING.

Do not exceed recommended baking temperatures. Baking ovens must be properly ventilated. At temperatures above 400 C (750 F), small amounts of hydrogen fluoride can be evolved; amounts increase as temperatures increase. Hydrogen fluoride is toxic and can cause skin and eye irritation. (3ppm - ceiling ACGIH-TLV). High concentrations can cause lung damage, pulmonary edema, burns. Some vegetation is particularly sensitive to damage by hydrogen fluoride and attention must be given to exhaust ventilation.

Explosive reaction may occur above 800 degrees F with finely divided fluorocarbon and metal powder (aluminum or magnesium). Operations such as grinding, buffing or grit blasting may generate such mixtures. Avoid any dust buildup with fluorocarbons and metal mixtures.

Potential Health Effects:

This MSDS format adheres to the standards and regulatory requirements of United States and may not meet regulatory requirements in other countries.

DUPONT MATERIAL SAFETY DATA SHEET

Page: 1
06/29/2002

***** SECTION 1 - Product and Company Identification *****

Manufacturer: E.I. DuPont de Nemours & Co.
Fluoroproducts
Wilmington, DE, 19898

Telephone: Product Information: (800) 441-7515
Medical Emergency: (800) 441-3637
Transportation Emergency: (800) 424-9300 (CHEMTREC)

PRODUCT NAME: PFA POWDER WHITE

PRODUCT CODE: 532- 7100 011211

Chemical Family: No Information Available

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***** SECTION 2 - Composition, Information on Ingredients *****

CAS #	Ingredient	Concentration/ Range (%)	Exposure Limits**
26655-00-5	PERFLUOROALKOXY RESIN		A None O None
13463-67-7	TITANIUM DIOXIDE		A 10.0 mg/m3 O 15.0 mg/m3 Total Dust SiO2 D 5.0 mg/m3 Respirable D 10.0 mg/m3 Total Dust D 5.0 mg/m3 Respirable Dust

OSHA HAZARDOUS? Yes


** A = ACGIH, O = OSHA, D = Dupont, S = Supplier (For additional definition of terms, see Section 16). Limits are 8-hour TWA unless otherwise specified.

***** SECTION 3 - Hazards Information *****

Emergency Overview:

CAUTION! LOW HAZARD FOR USUAL INDUSTRIAL OR COMMERCIAL HANDLING.

Do not exceed recommended baking temperatures. Baking ovens must be properly ventilated. At temperatures above 400 C (750 F), small amounts of hydrogen fluoride can be evolved; amounts increase as temperatures increase. Hydrogen fluoride is toxic and can cause skin

	DEQ AIR QUALITY PROGRAM 1410 N. Hilton, Boise, ID 83706 For assistance, call the Air Permit Hotline - 1-877-5PERMIT	PERMIT TO CONSTRUCT APPLICATION Revision 3 4/5/2007											
Please see instructions on page 2 before filling out the form.													
Company Name:		NxEdge, Inc.											
Facility Name:													
Facility ID No.:		001-00202											
Brief Project Description:		Facility Equipment and Throughput Modifications											
SUMMARY OF FACILITY WIDE EMISSION RATES FOR CRITERIA POLLUTANTS - POINT SOURCES													
1.	2.	3.											
		PM ₁₀		SO ₂		NO _x		CO		VOC		Lead	
Emissions units	Stack ID	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Point Source(s)													
PLGEN34	EP-1	0.06	0.26										
PLRD (previously PLFARR1)	EP-2	0.00	0.00										
WETPOWC (Prev. WETC)	EP-3	0.31	0.04							9.62	1.20		
CAMBC	EP-4	0.01	0.02										
APBR	EP-5	0.06	0.18										
SBUFARR1	EP-6	0.05	0.23										
SBUFARR2	EP-7	0.05	0.23										
SBUFARR3	EP-8	0.05	0.23										
ECOVEN1	EP-9	0.01	0.02	0.00	0.00	0.07	0.32	0.07	0.29	0.84	0.12		
SBUHTR1	EP-10	0.01	0.02	0.00	0.00	0.07	0.32	0.06	0.27	0.00	0.02		
SBUHTR2	EP-11	0.01	0.02	0.00	0.00	0.07	0.32	0.06	0.27	0.00	0.02		
SBUHTR3	EP-12	0.01	0.02	0.00	0.00	0.07	0.32	0.06	0.27	0.00	0.02		
PLGEN5	EP-13	0.09	0.02									0.00	0.00
PLBBMAC	EP-14	0.04	0.05									0.00	0.00
AECPP2	EP-15	0.01	0.00										
Total		0.75	1.38	0.00	0.01	0.29	1.28	0.25	1.09	10.47	1.37	0.00	0.00



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PERMIT TO CONSTRUCT APPLICATION

Revision 2
4/5/2007

Please see instructions on page 2 before filling out the form.

Company Name: **NxEdge, Inc.**

Facility Name:

Facility ID No.:

001-00202

Brief Project Description:

Facility Equipment and Throughput Modifications

SUMMARY OF FACILITY WIDE EMISSION RATES FOR CRITERIA POLLUTANTS - FUGITIVE SOURCES

1.	2.	3.											
		PM ₁₀		SO ₂		NO _x		CO		VOC		Lead	
Fugitive Source Name	Fugitive ID	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Fugitive Source(s)													
AECPP1 (volume source)	EP-16	0.00	0.02										
							</						



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PERMIT TO CONSTRUCT APPLICATION

Revision 3
4/5/2007

Please see instructions on page 2 before filling out the form.

Company Name: **NxEdge, Inc.**

Facility Name:

Facility ID No.:

001-00202

Brief Project Description: Facility Equipment and Throughput Modifications

SUMMARY OF EMISSIONS INCREASE (PROPOSED PTE - PREVIOUSLY MODELED PTE) - POINT SOURCES

1.	2.	3.											
		PM ₁₀		SO ₂		NO _x		CO		VOC		Lead	
Emissions units	Stack ID	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Point Source(s)													
PLGEN34	EP-1	0.02	0.17										
PLRD (previously PLFARR!)	EP-2	(0.02)	(0.04)										
WETPOWC (Prev. WETC)	EP-3	0.30	0.02							--	1.09		
CAMBC	EP-4	0.01	0.02										
APBR	EP-5												
SBUFARR1	EP-6												
SBUFARR2	EP-7												
SBUFARR3	EP-8												
ECOVEN1	EP-9	(0.00)	(0.00)		0.00	0.00	0.02	0.03	0.15	0.83	0.09		
SBUHTR1	EP-10												
SBUHTR2	EP-11												
SBUHTR3	EP-12												
PLGEN5	EP-13	(0.10)	(0.34)									(0.00)	0.00
PLBBMAC	EP-14	0.04	0.05									0.00	0.00
AECPP2	EP-15	0.01	0.00										
				</									



DEQ AIR QUALITY PROGRAM
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4/5/2007

Please see instructions on page 2 before filling out the form.

Company Name:	NxEdge, Inc.
---------------	--------------

Facility Name:

001-00202

Brief Project Description:	Facility Equipment and Throughput Modifications
----------------------------	---

SUMMARY OF EMISSIONS INCREASE (PROPOSED PTE - PREVIOUSLY MODELED PTE) - FUGITIVE SOURCES

1.

2.

3.

Air Pollutant Maximum Change in Emissions Rate (lbs/hr or t/yr)

PM₁₀

 SO_2

NO_x

CO

VOC

Lead

Fugitive Source Name

Fugitive ID

T

Fugitive Source(s)

AECPP1 (volume source)

EP-16

1

Total

0.00

0.02

5. EMISSION INVENTORY WORKBOOK FORMS EI1-EI4 DOCUMENTATION

Criteria, TAP and HAP pollutant emissions from NxEdge sources are summarized in Tables 5.1 to 5.3 (attached). These facility-wide emissions include those from the modified sources addressed by this permit modification and previously permitted sources unchanged by this modification. Unmodified sources include the Aluminum Parts Buffing Room (APBC, EP-5), the AEC Spray Rooms Filter Units (SBUFARR1-3, EP-6 to EP-8), and the AEC Spray Room Air Supply Heaters (SBUHTR1-3, EP-10 to EP-12).

5.1 Criteria Pollutant Facility-Wide Point Source Emissions

Estimated criteria pollutant emissions at NxEdge are summarized in Table 5-1 (attached) and on Permit Form EI1. The only known sources of nitrogen oxides, carbon monoxide (CO), and sulfur dioxide (SO₂) emissions are the natural-gas fired curing oven and three AEC air heaters. A small amount of lead emissions are possible from stainless steel processing in the STS area. There are numerous sources of particulate emissions at NxEdge. All particulate emissions are conservatively assumed to be PM₁₀.

5.2 Criteria Pollutant Facility-Wide Fugitive Emissions

NxEdge is an indoor production facility with primarily point sources of emissions. The potential fugitive emissions from the AEC media blasting cabinet that vents into the building were included in the point source emissions from AEC Parts Preparation Room Two (see Section 3.7). However, following IDEQ recommendations, the wall-mounted fan in AEC Part Prep Room One is treated as a volume source. The emissions from this source (AECPP1) are summarized in Table 5-1 (attached) and Permit Form EI2.

5.3 Criteria Pollutant Facility-Wide Point Source and Fugitive Emissions Increase

The increases in hourly and annual emission of criteria pollutants are summarized in Table 5-1 and on Permit Forms EI3 and EI4. The facility-wide increase in hourly emissions of PM₁₀ associated with this modification is 0.36 pounds per hour. Annual PM₁₀ emissions are estimated to decrease by 0.10 tons per year. The increases in uncontrolled emissions of SO₂, NO_x, CO and lead associated with this permit modification are either zero or very small.

5.4 Toxic Air Pollutant Facility-Wide Emissions

Estimated uncontrolled and controlled TAP emissions from NxEdge are summarized in Table 5-2A (attached). For some sources, uncontrolled emissions were not calculated, primarily because actual material use rates are far below uncontrolled use rates and/or permitted limits are necessary to demonstrate compliance with air quality standards. In the STS Area, only controlled emissions were estimated from the R&D Room. In the Fluoropolymer Area, only controlled emissions were estimated from the spray booths.

Annual controlled TAP emissions are summarized in Table 5-2B, below.

Table 5-2B: Facility-Wide Annual TAP Emissions Summary

Source	Controlled TAP Emissions (tons/yr)
PLGEN34	0.19
PLRD	0.0017
WETPOWC	0.96
CAMBC	0.02
APBR	0.18
SBUFARR1	0.23
SBUFARR2	0.18
ECOVEN1	0.16
SBUHTR1	0.011
SBUHTR2	0.011
SBUHTR3	0.011
PLGEN5	0.10
PLBBMAC	0.058
AECPP1	0.015
AECPP2	0.0038
Total =	2.14

5.5 Toxic Air Pollutant Facility-Wide Emissions Increase

The increases in uncontrolled emissions associated with this PTC modification are summarized in Table 5-2. A complete analysis with respect to modeling applicability can be found in Section 7.1.2.

5.6 Hazardous Air Pollutant Facility-Wide Emissions

Estimated HAP emissions at NxEdge are summarized in Table 5-3 (attached). Facility-wide combined HAP emissions are 0.62 tons per year.

5.7 Facility-Wide Total Pollutant Emissions Increase

The Statement of Basis associated with the original PTC calculated the facility-wide emission inventory at 3.6 tons per year. With this proposed modification, total criteria pollutants are 5.15 tons/yr (Table 5.1), total TAPs are 2.14 tons per year, and total HAPs are 0.62 tons per year, resulting in a new facility-wide emission inventory of 7.9 tons per year, and an increase in inventory of 4.3 tons per year associated with this modification.

**Table 5-1:
Facility-Wide Criteria Pollutant Emissions**

Criteria Pollutant	Significant Emission Rate (tons/yr)	Modeling Threshold		Modeling Source Name	Facility Hourly Emissions			Facility Annual Emissions			
		lbs/hr	tons/yr		Current Permit (lb/hr)	Proposed Mod. (lb/hr)	Emission Change (lb/hr)	Current Permit (ton/yr)	Proposed Mod. (ton/yr)	Emission Change (ton/yr)	Aggregate Emission Change (% of Sig.)
PM ₁₀	15	0.2	1	PLGEN34	0.039	0.060	0.021	0.093	0.264	0.171	-0.7%
				PLRD	0.024	0.0029	-0.021	0.042	0.00018	-0.042	
				WETPOWC	0.013	0.310	0.298	0.025	0.042	0.017	
				CAMBC	8.29E-05	0.0056	0.0055	2.61E-04	0.0245	0.0242	
				APBR	0.059	0.059	0	0.18	0.18	0	
				SBUFARR1	0.053	0.053	0	0.23	0.23	0	
				SBUFARR2	0.053	0.053	0	0.23	0.23	0	
				SBUFARR3	0.053	0.053	0	0.23	0.23	0	
				ECOVEN1	0.0056	0.0056	0	0.024	0.024	0	
				SBUHTR1	0.0055	0.0055	0	0.024	0.024	0	
				SBUHTR2	0.0055	0.0055	0	0.024	0.024	0	
				SBUHTR3	0.0055	0.0055	0	0.024	0.024	0	
				PLGEN5	0.185	0.086	-0.099	0.365	0.024	-0.341	
				PLBBMAC	0	0.043	0.043	0	0.050	0.050	
				AECPP1	0	0.0034	0.0034	0	0.015	0.0150	
				AECPP2	0	0.0063	0.0063	0	0.0038	0.0038	
				Total =	0.50	0.76	0.26	1.50	1.40	-0.10	
SO ₂	40	0.2	1	ECOVEN1	4.41E-04	4.41E-04	0	0.0019	0.0019	0	0%
				SBUHTR1	4.37E-04	4.37E-04	0	0.0019	0.0019	0	
				SBUHTR2	4.37E-04	4.37E-04	0	0.0019	0.0019	0	
				SBUHTR3	4.37E-04	4.37E-04	0	0.0019	0.0019	0	
				Total =	1.8E-03	1.8E-03	0	0.008	0.008	0	
NO _x	40	--	1	ECOVEN1	0.069	0.074	0.004	0.303	0.322	0.019	0.05%
				SBUHTR1	0.073	0.073	0	0.319	0.319	0	
				SBUHTR2	0.073	0.073	0	0.319	0.319	0	
				SBUHTR3	0.073	0.073	0	0.319	0.319	0	
				Total =	0.29	0.29	0.004	1.26	1.28	0.019	
CO	100	14.0	--	ECOVEN1	0.040	0.066	0.026	0.135	0.288	0.153	0.15%
				SBUHTR1	0.061	0.061	0	0.268	0.268	0	
				SBUHTR2	0.061	0.061	0	0.268	0.268	0	
				SBUHTR3	0.061	0.061	0	0.268	0.268	0	
				Total =	0.22	0.25	0.03	0.94	1.09	0.15	
VOC	40	--	--	WETPOWC	--	9.62	--	0.117	1.20	1.1	3%
				ECOVEN1	0.012	0.84	0.83	0.031	0.118	0.09	
				SBUHTR1	4.01E-03	4.01E-03	0	0.018	0.018	0	
				SBUHTR2	4.01E-03	4.01E-03	0	0.018	0.018	0	
				SBUHTR3	4.01E-03	4.01E-03	0	0.018	0.018	0	
				Total =	0.02	10.47	10	0.20	1.37	1.2	
Lead	0.6	--	0.6	PLRD	3.0E-08	0	-3.0E-08	5.1E-08	0	-5.1E-08	0.0001%
				PLGEN5	2.9E-07	2.3E-07	-6.6E-08	5.0E-07	9.9E-07	4.8E-07	
				PLBBMAC	0	3.56E-08	3.6E-08	0	1.6E-07	1.6E-07	
				Total =	3.2E-07	2.6E-07	-6.04E-08	5.6E-07	1.1E-06	5.9E-07	

Table 5-2A:
Facility-Wide Toxic Air Pollutant Emissions (page 1)

Toxic Air Pollutant	TAP Type (24 hr or Annual Avgd EL)	TAP Screening Emission Level (lb/hr)	Modeling Source Name	Uncontrolled Hourly Emissions				Controlled Hourly Emissions		
				Current Permit (lb/hr)	Proposed Modification (lb/hr)	Aggregate Emission Change (% of EL)	Total Facility Emissions (% of EL)	Current Permit (lb/hr)	Proposed Modification (lb/hr)	Emission Change (lb/hr)
Acetone	585 (24 hr)	119	WETPOWC	1.1E-03	Note 1	Note 1	Note 1	1.1E-03	1.4	1.4
			Total =	1.1E-03				1.1E-03	1.4	1.4
Al- Metal and Oxide	585 (24 hr)	0.667	PLGEN34	0	33980%	35205%	0	0	1.6E-02	1.6E-02
			PLRD	6.66				1.3E-02	2.9E-04	-1.3E-02
			WETPOWC	0				0	4.1E-04	4.1E-04
			CAMBC	0.048				0.048	3.8E-03	-4.4E-02
			APBR	0.059				0.059	0.059	0.0E+00
			SBUFARR1	1.057				0.05286	0.05286	0
			PLGEN5	0.34				6.9E-04	3.6E-03	2.9E-03
			PLBBMAC	0				0	2.0E-02	2.0E-02
			AECPP1	0				0	3.4E-03	3.4E-03
			AECPP2	0				0	3.4E-03	3.4E-03
			Total =	8.17				0.174	0.163	-0.010
Arsenic	586 (Annl)	1.5E-06	ECOVEN1	1.2E-07	0%	30%	1.2E-07	1.2E-07	1.2E-07	0
			SBUHTR1-3	3.4E-07				3.4E-07	3.4E-07	0
			Total =	4.6E-07				4.6E-07	4.6E-07	0
Barium	585 (24 hr)	0.033	ECOVEN1	2.6E-06	0%	0.03%	2.6E-06	2.6E-06	2.6E-06	0
			SBUHTR1-3	7.4E-06				7.4E-06	7.4E-06	0
			Total =	1.0E-05				1.0E-05	1.0E-05	0
Benzene	586 (Annl)	8.0E-04	ECOVEN1	1.2E-06	0%	0.6%	1.2E-06	1.2E-06	1.2E-06	0
			SBUHTR1-3	3.6E-06				3.6E-06	3.6E-06	0
			Total =	4.8E-06				4.8E-06	4.8E-06	0
i-Butyl Alcohol	585 (24 hr)	10	WETPOWC	2.1E-03	Note 1	Note 1	2.1E-03	2.1E-03	0.12	0.12
			Total =	2.1E-03				2.1E-03	0.12	0.12
n-Butyl Alcohol	585 (24 hr)	10	WETPOWC	0	Note 1	Note 1	0	0	0.11	0.11
			Total =	0				0	0.11	0.11
Cadmium	586 (Annl)	3.7E-06	PLRD	4.2E-06	49154%	50445%	8.4E-09	8.4E-09	0	-8.4E-09
			ECOVEN1	6.5E-07				6.5E-07	6.5E-07	0
			SBUHTR1-3	1.9E-06				1.9E-06	1.9E-06	0
			PLGEN5	4.1E-05				8.2E-08	1.6E-07	7.9E-08
			PLBBMAC	0				0	2.5E-08	2.5E-08
			Total =	4.8E-05				2.6E-06	2.7E-06	9.6E-08
			PLGEN5	10.8				0.108	0.0013	-0.11
Calcium Hydroxide	585 (24 hr)	0.333	Total =	10.8	652%	3904%	0.108	0.0013	-0.11	
Carbon Black	585 (24 hr)	0.23	WETPOWC	7.6E-04	Note 1	Note 1	7.6E-04	7.6E-04	2.2E-03	1.4E-03
			Total =	7.6E-04				7.6E-04	2.2E-03	1.4E-03
Chromium	585 (24 hr)	0.033	PLRD	0.014	69389%	69448%	3.6E-06	3.6E-06	2.9E-04	2.9E-04
			WETPOWC	5.2E-03				5.2E-03	0	-5.2E-03
			ECOVEN1	8.2E-07				8.2E-07	8.2E-07	0
			SBUHTR1-3	2.4E-06				2.4E-06	2.4E-06	0.0E+00
			PLGEN5	0				0	1.7E-03	1.7E-03
			PLBBMAC	0				0	5.4E-04	5.4E-04
			Total =	0.019				5.2E-03	2.6E-03	-2.6E-03
			PLRD	0				0	6.8E-08	6.8E-08
Chromium (VI)	586 (Annl)	5.60E-07	WETPOWC	1.4E-05	47630000%	47632500%	4.2E-07	4.2E-07	0	-4.2E-07
			PLGEN5	0				0	5.4E-07	5.4E-07
			PLBBMAC	0				0	7.9E-07	7.9E-07
			Total =	0.00				4.2E-07	1.4E-06	9.8E-07
Cobalt	585 (24 hr)	0.0033	PLRD	0	3712%	3712%	0	0	2.9E-04	2.9E-04
			ECOVEN1	4.9E-08				4.9E-08	4.9E-08	0
			SBUHTR1-3	1.4E-07				1.4E-07	1.4E-07	0
			PLBBMAC	0				0	1.2E-05	1.2E-05
			Total =	1.9E-07				1.9E-07	3.0E-04	3.0E-04
Copper	585 (24 hr)	0.067	PLRD	0.0016	392%	417%	3.2E-06	3.2E-06	0	-3.2E-06
			ECOVEN1	5.0E-07				5.0E-07	5.0E-07	0
			SBUHTR1-3	1.4E-06				1.4E-06	1.4E-06	0
			PLGEN5	0.016				3.1E-05	2.4E-05	-7.1E-06
			PLBBMAC	0				0	3.8E-06	3.8E-06
			Total =	0.017				3.6E-05	3.0E-05	-6.5E-06
Diacetone Alcohol	585 (24 hr)	16	WETPOWC	1.2E-02	Note 1	Note 1	1.2E-02	1.2E-02	1.10	1.09
			Total =	1.2E-02				1.2E-02	1.10	1.09
Dichlorobenzene	585 (24 hr)	20	ECOVEN1	7.1E-07	0%	0.00001%	7.1E-07	7.1E-07	7.1E-07	0
			SBUHTR1-3	2.0E-06				2.0E-06	2.0E-06	0
			Total =	2.7E-06				2.7E-06	2.7E-06	0
Fibrous Glass Dust	585 (24 hr)	0.667	CAMBC	0	5.5%	5.5%	0	0	0.0018	0.0018
			Total =	0				0	0.0018	0.0018
Flouride	585 (24 hr)	0.167	ECOVEN1	4.0E-02	6%	62%	4.0E-02	4.0E-02	1.0E-01	6.3E-02
			Total =	4.0E-02				4.0E-02	1.0E-01	6.3E-02
Formaldehyde	586 (Annl)	5.10E-04	WETPOWC	1.4E-05	-2.8%	34%	1.4E-05	1.4E-05	2.6E-04	2.4E-04
			ECOVEN1	4.4E-05				4.4E-05	4.4E-05	0
			SBUHTR1-3	1.3E-04				1.3E-04	1.3E-04	0
			Total =	1.8E-04				1.9E-04	4.3E-04	2.4E-04
Hafnium	585 (24 hr)	0.033	PLGEN5	0	1458%	1458%	0	0	4.1E-05	4.1E-05
			PLBBMAC	0				0	7.1E-06	7.1E-06
			Total =	0.000				0	4.8E-05	4.8E-05
n-Hexane	585 (24 hr)	12	ECOVEN1	1.1E-03	0%	0.03%	1.1E-03	1.1E-03	1.1E-03	0
			SBUHTR1-3	3.0E-03				3.0E-03	3.0E-03	0
			Total =	4.1E-03				4.1E-03	4.1E-03	0

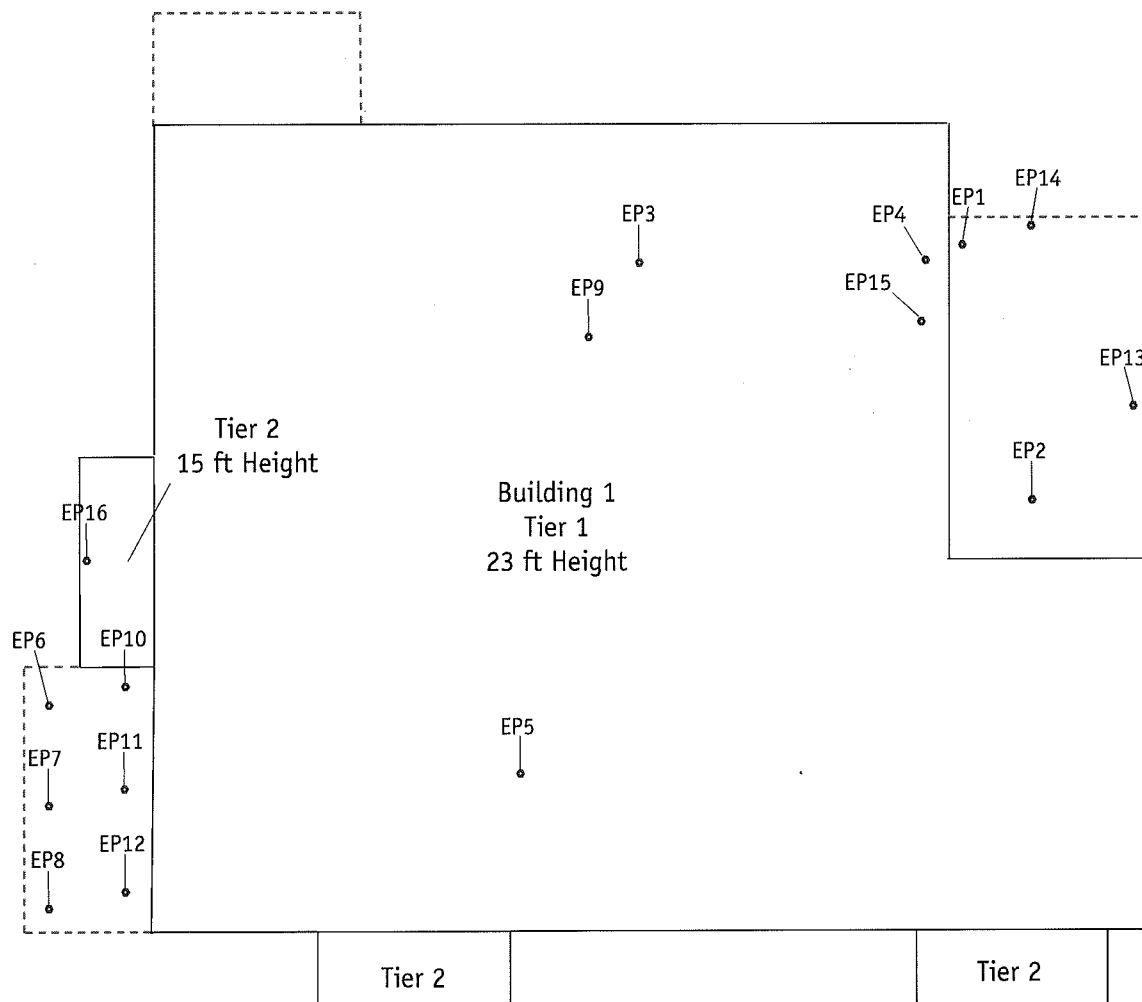
Table 5-2A:
Facility-Wide Toxic Air Pollutant Emissions (page 2)

Toxic Air Pollutant	TAP Type (24 hr or Annual Avgd EL)	TAP Screening Emission Level (lb/hr)	Modeling Source Name	Uncontrolled Hourly Emissions				Controlled Hourly Emissions		
				Current Permit (lb/hr)	Proposed Modification (lb/hr)	Aggregate Emission Change (% of EL)	Total Facility Emissions (% of EL)	Current Permit (lb/hr)	Proposed Modification (lb/hr)	Emission Change (lb/hr)
Hydrogen Chloride	585 (24 hr)	0.05	ECOVEN1	1.3E-02	1.3E-02	0%	25%	1.3E-02	1.3E-02	0
			Total =	1.3E-02	1.3E-02			1.3E-02	1.3E-02	0
Isopropyl Alcohol	585 (24 hr)	65	WETPOWC	2.2E-03	Note 1	Note 1	Note 1	2.2E-03	1.4	1.4
			Total =	2.2E-03				2.2E-03	1.4	1.4
Manganese	585 (24 hr)	0.333	PLRD	0.00143	Note 1	80%	80%	3.6E-07	2.9E-04	2.9E-04
			ECOVEN1	2.2E-07				2.2E-07	2.2E-07	0
			SBUHTR1-3	6.4E-07				6.4E-07	6.4E-07	0.0E+00
			PLBBMAC	0				0	2.7E-05	2.7E-05
			Total =	1.4E-03				1.2E-06	3.2E-04	3.2E-04
Mercury	585 (24 hr)	0.001	ECOVEN1	1.5E-07	0%	0%	0.06%	1.5E-07	1.5E-07	0
			SBUHTR1-3	4.4E-07				4.4E-07	4.4E-07	0
			Total =	5.9E-07				5.9E-07	5.9E-07	0
Methylene diphenyl isocyanate (MDI)	585 (24 hr)	0.003	WETPOWC	0	Note 1	Note 1	Note 1	0	0.022	0.022
			Total =	0				0	0.022	0.022
Methyl Isobutyl Ketone	585 (24 hr)	13.7	WETPOWC	2.7E-02	Note 1	Note 1	Note 1	2.7E-02	2.6	2.6
			Total =	2.7E-02				2.7E-02	2.6	2.6
Molybdenum	585 (24 hr)	0.667	PLRD	0.0020	Note 1	6380%	6380%	5.0E-07	2.9E-04	2.9E-04
			ECOVEN1	6.5E-07				6.5E-07	6.5E-07	0
			SBUHTR1-3	1.9E-06				1.9E-06	1.9E-06	0
			PLGEN5	0				0	3.5E-03	3.5E-03
			PLBBMAC	0				0	7.6E-04	7.6E-04
			Total =	0.002				3.0E-06	4.5E-03	4.5E-03
Naphthalene	585 (24 hr)	3.33	ECOVEN1	3.6E-07	0%	0%	0.00004%	3.6E-07	3.6E-07	0
			SBUHTR1-3	1.0E-06				1.0E-06	1.0E-06	0
			Total =	1.4E-06				1.4E-06	1.4E-06	0
Nickel	586 (Annl)	2.70E-05	PLRD	0.077	Note 1	156363962%	156649165%	1.9E-05	1.6E-06	-1.8E-05
			ECOVEN1	1.2E-06				1.2E-06	1.2E-06	0
			SBUHTR1-3	3.6E-06				3.6E-06	3.6E-06	0
			PLGEN5	0				0	6.2E-05	6.2E-05
			PLBBMAC	0				0	4.3E-05	4.3E-05
			Total =	0.077				2.4E-05	1.1E-04	8.7E-05
Pentane	585 (24 hr)	118	ECOVEN1	1.5E-03	0%	0%	0.005%	1.5E-03	1.5E-03	0
			SBUHTR1-3	4.4E-03				4.4E-03	4.4E-03	0
			Total =	5.9E-03				5.9E-03	5.9E-03	0
Silicon	585 (24 hr)	0.667	PLGEN34	10.05	Note 1	4688%	6846%	0.0283	0.0274	-8.7E-04
			PLRD	4.35				0.0087	2.9E-04	-8.4E-03
			PLGEN5	0				0	2.2E-03	2.2E-03
			PLBBMAC	0				0	1.7E-04	1.7E-04
			Total =	14.4				0.037	0.030	-6.9E-03
Silicon Carbide	585 (24 hr)	0.667	AECPP2	0	0%	8.6%	8.6%	0	0.0029	0.0029
			Total =	0				0	0.0029	0.0029
Tin	585 (24 hr)	0.133	PLRD	0.43	Note 1	21570%	28664%	8.7E-04	0	-8.7E-04
			PLGEN5	9.0				0.018	0.0033	-0.015
			PLBBMAC	0				0	5.2E-04	5.2E-04
			Total =	9.4				0.019	0.0038	-0.015
Toluene	585 (24 hr)	25	WETPOWC	1.2E-02	Note 1	-0.05%	0.00003%	1.2E-02	4.1E-01	0
			ECOVEN1	2.0E-06				2.0E-06	2.0E-06	0
			SBUHTR1-3	5.8E-06				5.8E-06	5.8E-06	0
			Total =	1.2E-02				1.2E-02	4.1E-01	0
1,24-Trimethyl benzene	585 (24 hr)	8.2	WETPOWC	8.6E-04	Note 1	Note 1	Note 1	8.6E-04	3.4E-02	3.4E-02
			Total =	8.6E-04				8.6E-04	3.4E-02	3.4E-02
Vanadium Oxide	585 (24 hr)	0.003	ECOVEN1	1.4E-06	Note 1	395741%	395742%	1.4E-06	1.4E-06	0
			SBUHTR1-3	3.9E-06				3.9E-06	3.9E-06	0
			PLGEN5	0				0	1.0E-03	1.0E-03
			PLBBMAC	0				0	1.6E-04	1.6E-04
			Total =	5.2E-06				5.2E-06	1.2E-03	1.2E-03
VM&P Naphtha	585 (24 hr)	91.3	WETPOWC	0	Note 1	Note 1	Note 1	0	1.2E-01	1.2E-01
			Total =	0				0	1.2E-01	1.2E-01
Xylene	585 (24 hr)	29	WETPOWC	1.3E-02	Note 1	Note 1	Note 1	1.3E-02	1.0E-01	9.0E-02
			Total =	1.3E-02				1.3E-02	1.0E-01	9.0E-02
Yttrium	585 (24 hr)	0.067	PLRD	0.29	Note 1	4756%	6429%	5.8E-04	0	-5.8E-04
			SBUFARR2	0.832				0.0416	0.0416	0
			PLGEN5	0				0	3.0E-04	3.0E-04
			PLBBMAC	0				0	5.1E-05	5.1E-05
			Total =	1.12				4.2E-02	4.2E-02	-2.3E-04
Zinc	585 (24 hr)	0.667	PLRD	0.21	Note 1	5192%	5533%	4.2E-04	0	-4.2E-04
			ECOVEN1	1.7E-05				1.7E-05	1.7E-05	0
			SBUHTR1-3	4.9E-05				4.9E-05	4.9E-05	0
			PLGEN5	2.1				4.1E-03	3.2E-03	-9.4E-04
			PLBBMAC	0				0	5.0E-04	5.0E-04
Zirconium	585 (24 hr)	0.333	Total =	2.273				4.6E-03	3.8E-03	-8.6E-04
			PLGEN5	0				0	2.1E-03	2.1E-03
			PLBBMAC	0				0	3.6E-04	3.6E-04
			Total =	0.0				0	2.4E-03	2.4E-03

Notes: 1. Uncontrolled emissions from the R&D Room and Fluoropolymer Spray Booths not calculated. All controlled TAP emissions are modeled.

**Table 5-3:
Facility-Wide Hazardous Pollutant Emissions**

Hazardous Air Pollutant	Facility-Wide Emissions (tons/yr)						
	PLGEN5	PLRD	PLMACBB	ECOVEN1	WETPOWC	SBUHTR1-3	Total
Arsenic	0	0	0	5.15E-07	0	1.48E-06	2.00E-06
Benzene	0	0	0	5.41E-06	0	1.56E-05	2.10E-05
Cadmium	7.05E-07	0	1.11E-07	2.83E-06	0	8.15E-06	1.18E-05
Chromium	1.71E-04	1.76E-05	1.84E-04	3.61E-06	0	1.04E-05	3.87E-04
Cobalt	0	1.68E-04	2.68E-05	2.16E-07	0	6.22E-07	1.96E-04
Dichlorobenzene	0	0	0	3.09E-06	0	8.89E-06	1.20E-05
Formaldehyde	0	0	0	1.93E-04	1.13E-03	5.56E-04	1.87E-03
Hexane	0	0	0	4.64E-03	0	1.33E-02	1.80E-02
Hydrogen Chloride	0	0	0	5.57E-02	0	0	5.57E-02
Hydrogen Fluoride	0	0	0	9.71E-02	0	0	9.71E-02
Lead	9.87E-07	0	1.56E-07	0	0	0	1.14E-06
Manganese	0	1.68E-04	5.87E-05	9.79E-07	0	2.81E-06	2.30E-04
MDI	0	0	0	0	0.067	0	6.67E-02
Mercury	0	0	0	6.70E-07	0	1.93E-06	2.60E-06
MIBK	0	0	0	0	0.31	0	3.15E-01
Naphthalene	0	0	0	1.57E-06	0	4.52E-06	6.09E-06
Nickel	2.70E-04	7.00E-06	1.87E-04	5.41E-06	0	1.56E-05	4.85E-04
Toluene	0	0	0	8.76E-06	0.050	2.52E-05	4.96E-02
Xylene	0	0	0	0	0.012	0	1.24E-02
Total Hazardous Air Pollutants (tons/yr) =							0.62

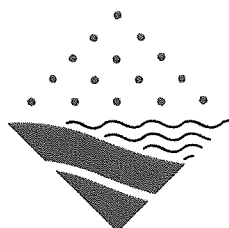


— building edge
 - - - property boundary
 - - - fence

Legend

○ emission point

scale
 0 ——— 40 ft.
 ↑
 N



TORF
 ENVIRONMENTAL
 MANAGEMENT

Plot Plan

NxEdge, Inc.
7500 W Mossy Cup
Boise, Idaho 83709

Facility No. 001-00202

May 2008

6. PLOT PLAN – FORM PP DOCUMENTATION

6.1 Facility Boundary

The NxEdge facility is located in an industrial park, adjacent to other buildings and businesses. Certain outdoor areas immediately adjacent to the building are surrounded by chain-link fence. However, much of the building perimeter is accessible by the public.

6.2 Building Dimensions

The emission sources are all associated with one building. This building has a flat, 23 foot high roof with three, small, lower, pitched-roof sections along the west and south walls. The building dimensions (in feet) are provided below, with width being the east-west dimension and length being the north-south dimension:

Building 1

Tier No.1 Height: 23

Tier No.1 Length: 160


Tier No. 1 Width: 197

Tier No.2 Height: 9 min
21 max

Southeast Section:
Southwest Section:
West Section:

Length: 18
Length: 18
Length: 37

Width: 37
Width: 37
Width: 18

	DEQ AIR QUALITY PROGRAM 1410 N. Hilton, Boise, ID 83706 For assistance, call the Air Permit Hotline - 1-877-5PERMIT	PERMIT TO CONSTRUCT APPLICATION Revision 3 4/5/2007

Please see instructions on page 2 before filling out the form.

Company Name:	NxEdge, Inc.
Facility Name:	
Facility ID No.:	001-00202
Brief Project Description:	Facility Equipment and Throughput Modifications

SUMMARY OF AIR IMPACT ANALYSIS RESULTS - CRITERIA POLLUTANTS

		1.		2.	3.	4.		5.
Criteria Pollutants	Averaging Period	Significant Impact Analysis Results (µg/m3)	Significant Contribution Level (µg/m3)	Full Impact Analysis Results (µg/m3)	Background Concentration (µg/m3)	Total Ambient Impact (µg/m3)	NAAQS (µg/m3)	Percent of NAAQS
PM ₁₀	24-hour		5	57.10	87.00	145.10	150	97%
	Annual		1	17.50	30.10	47.60	50	95%
SO ₂	3-hr		25				1300	
	24-hr		5				365	
	Annual		1				80	
NO ₂	Annual		1	8.40	32.00	40.40	100	40%
CO	1-hr		2000				10000	
	8-hr		500				40000	



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Company Name:	NxEdge, Inc.
---------------	--------------

Facility Name:

Facility ID No.:

001-00202

Brief Project Description:	Facility Equipment and Throughput Modifications
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POINT SOURCE STACK PARAMETERS

Page 3



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PERMIT TO CONSTRUCT APPLICATIONRevision 3
4/5/2007

Please see instructions on page 2 before filling out the form.

Company Name:	NxEdge, Inc.
---------------	--------------

Facility Name:

Facility ID No.:

001-00202

Brief Project Description:	Facility Equipment and Throughput Modifications
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FUGITIVE SOURCE PARAMETERS

[illegible]